Williams® ELECTRONICS, INC.

16P-496-103
Game No. 496
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GORGAR

INSTRUCTION BOOKLET

This booklet provides game operation, bookkeeping, game adjustment, and diagnostic procedures for GORGAR. For installation and special maintenance information refer to the blue-covered game manual. For detailed information refer to Williams Solid State Flipper Maintenance Manual.

SPECIAL CONSIDERATIONS WHEN REPLACING CIRCUIT BOARDS

CPU Board

1. For memory protection feature, revision level 6 CPU Boards (batteries located on lower right corner of board) must be used. Revision level 4 CPU Boards equipped with IC14 and IC16 sockets may be used but the memory protection feature is lost.
2. Must be equipped with green-labeled GORGAR PROMs or game ROM and green-labeled flipper ROMs.
3. When Game ROM is used, jumper J3 must be connected and J4 removed.

Sound Board

1. Model D 8224 required for speech.
2. Must be jumpered for white-labeled sound ROM operation and be equipped with Sound ROM 2. (Jumpers W2, W5, W7, W9, W10, and W15 connected; W3, W4, W6, W8, W11, W12, and W13 removed)

Power Supply Board

1. Fuse F4 (15A SB) for flipper solenoids and magnet must be installed.

Optional Speech Module

1. Requires 5T4961 (IC7), 5T4962 (IC5), and 5T4963 (IC6) speech ROMs.

GAME OPERATION

*Indicates adjustable features

Game Over Mode - Turn game ON; player scores show zero, high score to date* alternates with player 1 score, player 1 up lamp flashes, game over lamp lights, all playfield lamps except for credit lamp cycle in attract mode.

Credit Posting - Insert coin; knocker sounds, number of credits displayed. If maximum credits* exceeded by coin or high score to date*, credits are posted correctly, coin lockout de-energized until remaining credits are below maximum. No credits may be won and coins are rejected while lockout is energized.

Game Start - Push credit button; start-up tune played, ball served, credit display reduced by one, player 1 up lamp flashes until first scoring switch is made, ball in play shows 1. Pushing credit button before ball 2 displayed allows additional players.

Bonus Advance - "A-E" rollovers (3 advances for "B"), "1-4" targets, and eject hole. 10,000 bonus lights spinner, 20,000 bonus turns spinner off. Bonus multiplier advanced by spotting "A-B-C".

"1-4" Lamps - lights magnet for 50,000, advances lighting of stars 1 and 2 and "1-4" Target Special arrows. Spotting "D" and "E" spots one of "1-4" lamps.

"G-O-R" Drop Targets - spots "GOR", advances magnet lamps.

"G-A-R" Drop Targets - spots "GAR", advances lighting of jet bumpers, "GAR" 5,000 lamp, and bottom outside alternate Special lamps.

Extra Ball (maximum of one per ball) - made in eject hole when lit; eject hole lamps advanced by spotting "GOR" and "GAR". Lamps reset when Extra Ball collected from eject hole and reset for subsequent ball when Same Player Shoots is lit. Eject hole scores 5,000 or highest flashing value.

Magnet - making magnet switch energizes magnet, scores 1,000 or highest flashing value, flashes magnet lights; value reset to 1,000 when made for 20,000 or more.

Tilts - Ball in play tilted on first closure of Playfield and Ball Roll tilts and third* closure of Plumb Bob. Slam Tilt returns game to game over.

Memory - Magnet lamps, *eject hole lamps, partial spotting of "A-B-C", "D-E", or 1-4", and *features lit from "1-4" targets until target Special is made.

End of Game - Match Digits* appears in ball in play display, *credit awarded for match. Exceeding high score to date awards *three credits. Match, High Score to Date, and Game Over sounds made as appropriate.

With optional Speech Module, the following phrases are produced during game play:

ACHIEVEMENT	PHRASE
Game start	GORGAR speaks.
Making "1 - 4" targets	Me hurt.
Making magnet switch for 50,000	Me hurt.
Making magnet switch for other values	Me got you.
Spotting "GOR" and "GAR"	GORGAR.
Winning Extra Ball	You hurt GORGAR.
Making special or match	You beat me.
High Score to Date	You beat GORGAR.
Game over	Me GORGAR, beat me.

BOOKKEEPING AND EVALUATION TOTALS

(Functions 01-12)

1. In game over mode, set toggle switch to AUTO-UP and depress ADVANCE pushbutton. Test 04 is indicated in number of credits display, Function 00 in ball in play display, and game identification in Player 1 display.
2. Operate the ADVANCE pushbutton to display each function on the ball in play display (see Table 1) and record each total from Player 1 display. (To reveiw a total that has been advanced past, set toggle switch to MANUAL-DOWN and operate the ADVANCE pushbutton.)
3. Calculate the following if desired:
   % Paid Credits = Function 04 ÷ Function 08
4. Turn the game OFF and back ON to return to game over mode.
5. To change current High Score to Date to value of Function 13, momentarily depress HIGH SCORE RESET pushbutton.
6. To zero Functions 01-11, see page 7

GAME ADJUSTMENT PROCEDURE

(Functions 13-35)

Coin door must be open to change settings.

1. In game over mode, set toggle switch to AUTO-UP and depress ADVANCE pushbutton. Test 04 is indicated in number of credits display, Function 00 in ball in play display, and game identification in Player 1 display.
2. **To raise** Function number in ball in play display, operate ADVANCE pushbutton with switch set to AUTO-UP. **To lower** Function number operate ADVANCE with it set to MANUAL-DOWN.
3. With desired Function indicated in ball in play display, **raise** value in player 1 display by operating credit button with switch set to AUTO-UP; **lower** value by operating credit button with it set to MANUAL-DOWN. Value left of Player 1 display is new setting. For values see Table 1 and (for pricing) Table 2.
4. Repeat steps 2 and 3 until all required adjustments have been made.
5. Turn game OFF and back ON to return to game over mode.
6. To restore factory settings **and** zero audit totals, see page 7.

DIAGNOSTIC PROCEDURES

(Display Digits, Lamp, Solenoid, and Switch Tests)

1. In game over mode, set toggle switch to MANUAL-DOWN and depress ADVANCE. All displays should go blank.
2. Momentarily depress ADVANCE and set toggle switch to AUTO-UP. Display Digits test is performed.
3. Momentarily depress ADVANCE. Test 01 is indicated on number of credits display and Lamp Test is performed.
4. Set toggle switch to MANUAL-DOWN and momentarily depress ADVANCE. Test 02 is indicated on number of credits display and solenoid 01 on the ball in play display; solenoid 01 is pulsed by driver board.
5. Operate ADVANCE to pulse each solenoid (see Figure 3).
6. Set toggle switch to AUTO-UP and momentarily depress ADVANCE. Test 03 is indicated on number of credits display and stuck switches on ball in play display.
7. See Figure 4 . Operate switches; switch number is indicated on ball in play display.
8. Turn game OFF and back ON to return to game over mode.
9. To set up Auto-Cycle Mode (Display Digits, Lamp, and Solenoid Tests) see page 7.

Table 1. Game Adjustments

FUNCTION	DESCRIPTION	NOTES	FACTORY SETTING
00	Game Identification	1	1496 1
01	Coins, Left Chute (Closest to coin door hinge)	1	—
02	Coins, Center Chute	1	
03	Coins, Right Chute	1	—
04	Total Paid Credits	1	
05	Total Specials	1	
06	Total Replay (Extra Ball) Scores	1	
07	Match and High Score to Date Credits	1	
08	Total Credits	1,2	
09	Total Extra Balls	1,3	-
10	Total Ball Time in Minutes	1	
11	Total Number of Balls Played	1	
12	Current High Score to Date	4	500,000
13	Backup High Score to Date	5	500,000
14	Replay 1 Score	6	300,000
15	Replay 2 Score	6	430,000
16	Replay 3 Score	6	550,000
17	Replay 4 Score	6	0
18	Maximum Credits	7	20
19	Standard and Custom Pricing Control (00-07)	8	05
20	Left Coin Slot Multiplier	8	01
21	Center Coin Slot Multiplier	8	04
22	Right Coin Slot Multiplier	8	01
23	Coin Units Required for Credit	8	01
24	Coin Units Bonus Point	8	04
25	High Score Credits	5	03
26	Match (00=ON, 01=OFF)	—	00
27	Special	—	00
	00 = Awards Credit		
	01 = Awards Extra Ball		
	02 = Awards Points		
28	Scoring Awards	—	00
	00 = Credits at Replay Score		
	01 = Extra Ball at Replay Score		
29	Maximum Plumb Bob Tilts (1-9)	—	03
30	Number of Balls (03 or 05)	9	03
31	Outlane Special Control		01
	00 = Top and Bottom Jet Bumpers and "G-A-R" 5000 Lit Together		
	01 = Top and Bottom Jet Bumpers Lit Together		
	02 = All Features Lit Separately		
32	Eject Hole Control		00
	00 = Lamps Restore, 10,000 Not Lit Initially		
	01 = Lamps Restore, 10,000 Lit Initially		
	02 = Lamps do not Restore, 10,000 Not Lit Initially		
	03 = Lamps do not Restore, 10,000 Lit Initially		
33	Extra Ball and "1-4" Lamps	9	00
	00 = Extra Ball Allowed, Lamps Spotted Randomly		
	01 = No Extra Ball, Lamps Spotted Randomly		
	02 = Extra Ball Allowed, Lamps Spotted in Sequence		
	03 = No Extra Ball, Lamps Spotted in Sequence		
34	"1-4" Target Special Control	9	00
	00 = Star Lamps Restore, Star 1 Not Lit Initially		
	01 = Star Lamps Restore, Star 1 Lit Initially		
	02 = Star Lamps do not Restore, Star 1 not Lit Initially		
	03 = Star Lamps do not Restore, Star 1 Lit Initially		
35	Heartbeat Background Sound	—	01
	00 = Sound OFF		
	01 = Sound ON		

Notes:

1. Functions 00-11 cannot be changed from the coin door; however, Functions 01-11 can be set to zero as described on page 7.
2. Total Credits (Function 08) is the sum of Function 04 and as applicable, Functions 05, 06, and 07.
3. Total Extra Balls (Function 09) is the sum of the game extra ball feature and Functions 15 and 06, as applicable.
4. Current High Score to Date (Function 12) can be changed to the value of the Backup High Score to Date (Function 13) by operating the HIGH SCORE RESET switch while in the game over mode.
5. Function 13 may be set to any multiple of 10,000 points. Setting Function 25 to zero with Function 13 set to any score but zero permits the High Score to Date feature to operate but no credits are awarded.
6. Functions 14-17 (Replay Scores) may be set to any multiple of 10,000 points. Setting a function to zero disables the replay score point. **Always disable the Replay 4 level first, the Replay 3 level second, etc. The replay levels must be set with ascending values.**
7. Setting Maximum Credits (Function 18) to zero places the game in a **free play mode.**
8. With Function 19 set to 00, Functions 20-24 must be set manually. Refer to Table 2 for seven standard pricing schemes (selected by values of 01-07 for Function 19) and custom pricing values.
9. For 5-Ball play, it is recommended that Function 33 be set to 02 and Function 34 be set to 01.

RECOMMENDED SCORE LEVELS

Levels	**Score Card**
CREDIT GAMES	
3-Ball:	
*300,000; 430,000; 550,000	496-14
or 290,000; 410,000	496-33
5-Ball:	
(See Note 9)	
480,000; 630,000	496-50
EXTRA BALL	
3-Ball:	
160,000; 290,000	496-66
5-Ball:	
200,000; 330,000	496-68

*Factory setting

Table 2. Standard and Custom Price Settings

COIN DOOR MECHANISM	CREDITS	FUNCTION 19	20	21	22	23	24
Twin-Quarter	1/25¢, 3/50¢, 7/$1	00	03	12	03	02	12
Quarter, Dollar, Quarter	1/25¢, 3/50¢, 7/$1 coin only	00	03	14	03	02	00
	1/25¢, 7/$1 coin only	00	01	07	01	01	00
	•1/25¢, 3/50¢, 6/$1	**01**	**01**	**04**	**01**	**01**	**02**
	1/25¢, 6/$1 coin only	00	01	06	01	01	00
	•1/25¢, 5/$1	**05**	**01**	**04**	**01**	**01**	**04**
	1/25¢, 5/$1 coin only	00	01	05	01	01	00
	•1/25¢, 4/$1	**02**	**01**	**04**	**01**	**01**	**00**
	1/50¢, 3/$1	00	01	04	01	02	04
	1/50¢	00	01	04	01	02	00
1DM, 5DM,2DM	**•2/1DM, 5/2DM, 14/5DM**	**03**	**13**	**65**	**26**	**05**	**65**
	1/1DM, 3/2DM, 10/5DM	00	09	45	18	05	45
20-Cent, 50-Cent	1/20¢, 3/50¢	00	06	00	15	05	00
1 Franc, 5 Frank	**•1/1F, 6/5F**	**04**	**01**	**00**	**05**	**01**	**05**
	1/1F, 7/5F	00	06	00	30	05	30
25 Cent,	**•1/25¢, 4/1G**	**06**	**01**	**00**	**04**	**01**	**00**
1 Guilder,	1/25¢, 5/1G	00	01	00	04	01	04
50 Yen, 100 Yen	**•1/50Y, 2/100Y**	**07**	**01**	**00**	**02**	**01**	**00**
1 Franc or	1/1F, 3/2F	00	01	01	01	01	02
Twin-1 Franc	1/1F	00	01	01	01	01	00
5 Franc,	**•1/5F, 2/10F**	**07**	**01**	**00**	**02**	**01**	**00**
10 Franc	1/10F	00	01	00	02	02	00
Twin-2 Franc	**•1/2F**	**02**	**01**	**04**	**01**	**01**	**00**
10, 20 Franc	**•1/10F, 2/20F**	**07**	**01**	**00**	**02**	**01**	**00**
Twin-1 Sucre	1/3S, 2/5S	00	02	00	02	05	00

•Indicates standard price settings by adjusting **only** Function 19. For other price settings, set Function 19 to 00 and set Functions 20 through 24 to the values indicated in the chart.

RESETTING AUDIT TOTALS AND ADJUSTMENTS; INITIATING AUTO-CYCLE MODE

1. In game over mode, set the AUTO-UP/MANUAL-DOWN switch to MANUAL-DOWN and momentarily depress the ADVANCE pushbutton. All displays should go blank.
2. Remove the backglass and unlatch and open the insert door.
3. Set all switches on the MASTER COMMAND slide switch to OFF (move to the right).
4. Set switch on MASTER COMMAND switch to ON (move to left):
   a. To zero audit totals (Functions 01-11) set switch 8 to ON.
   b. To restore factory settings **and** zero audit totals, set switch 7 to ON. *Coin Door must remain open to restore factory settings.*
   c. For Auto-Cycle Mode set switch 6 to ON.
5. Momentarily depress MASTER COMMAND ENTER pushbutton. The LEDs should blink once.
6. a. After zeroing audit totals turn game OFF and ON to return to game over mode.
   b. After restoring factory settings, turn game OFF and on **twice** to return to game over mode.
   c. To initiate Auto-Cycle Mode, set toggle switch to AUTO-UP and momentarily depress the ADVANCE pushbutton. Each cycle of this mode sequences through display digits test, flashes all multiplexed lamps 64 times and pulses each solenoid. To terminate the Auto-Cycle mode and go to game over, turn the game OFF and ON.

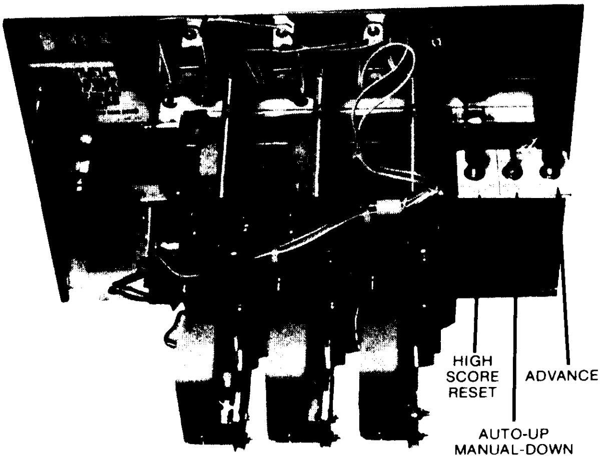


Figure 1. Coin Door Diagnostic Switches

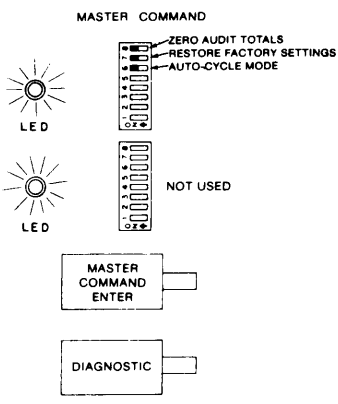
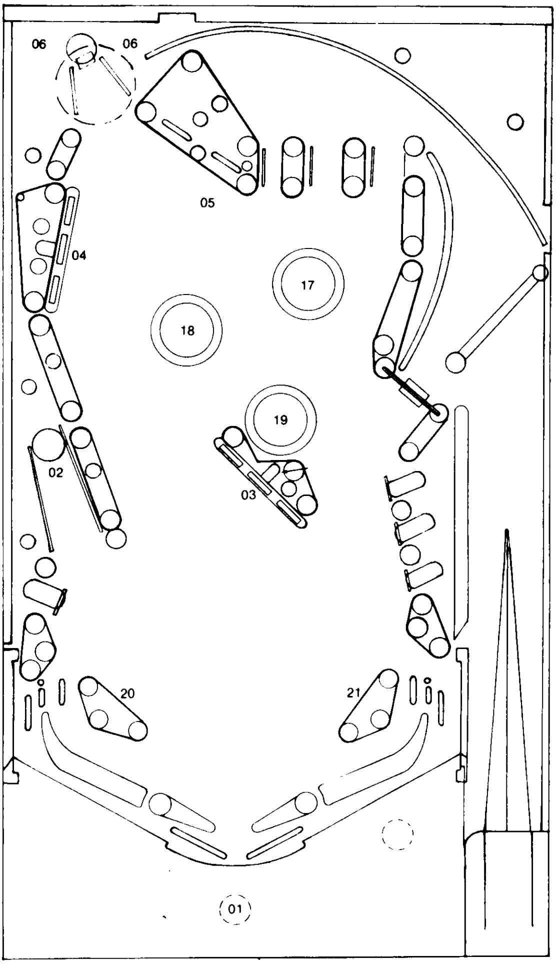


Figure 2. Master Command Settings Switch



Sol. No.	Description
01	Ball Release
02	Eject Hole
03	"G-A-R" Drop Targets Reset
04	"G-O-R" Drop Targets Reset
05	Magnet Relay
06	Magnet Lamps
07	Not Used
08	Not Used
09	Sound
10	Sound
11	Sound
12	Sound
13	Sound
14	Credit Knocker
15	Not Used
16	Coin Lockout
17	Top Jet Bumper
18	Left Jet Bumper
19	Bottom Jet Bumper
20	Left Kicker
21	Right Kicker
22	Not Used

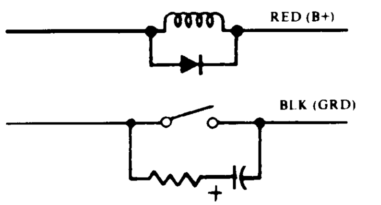
Figure 3. Playfield Solenoid Locations and Solenoid Chart

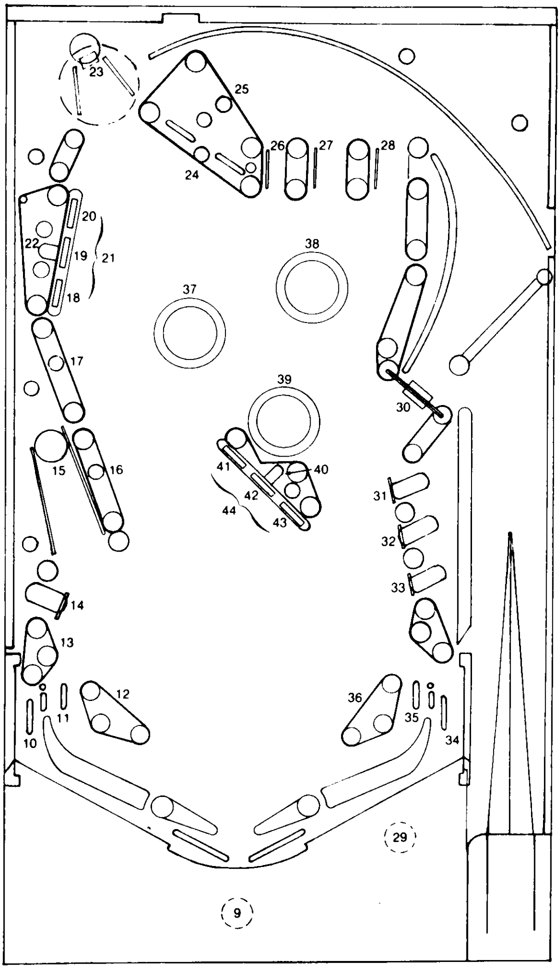
Table 3. Solenoid Connections

SOL. NO.	FUNCTION	WIRE COLOR	CONNECTIONS	DRIVER TRANS.	SOLENOID PART NO.
01	Ball Release	GRY-BRN	2P11-4, 8P3-17	Q15	SA-23-850-DC
02	Eject Hole	GRY-RED	2P11-5, 8P3-18	Q17	SG-23-850-DC
03	"G-A-R" Drop Targets Reset	GRY-ORN	2P11-7, 8P3-19	Q19	SA3-23-850-DC
04	"G-O-R" Drop Targets Reset	GRY-YEL	2P11-8, 8P3-20	Q21	SA3-23-850-DC
*05	Magnet Relay	GRY-GRN	2P11-9, 8P3-21	Q23	SM-35-4000-DC
06	Magnet Lamps	GRY-BLU	2P11-3, 8P3-22	Q25	Type 89 Bulbs
07	Not Used	GRY-VIO	2P11-2, 8P3-23	Q27	--
08	Not Used	GRY-BLK	2P11-1, 8P3-24	Q29	--
09	Sound	BRN-BLK	2P9-9, 10P3-3	Q31	--
10	Sound	BRN-RED	2P9-7, 10P3-2	Q33	--
11	Sound	BRN-ORN	2P9-1, 10P3-5	Q35	--
12	Sound	BRN-YEL	2P9-2, 10P3-4	Q37	--
13	Sound	BRN-GRN	2P9-3, 10P3-7	Q39	--
14	Credit Knocker	BRN-BLU	2P9-4, 7P1-16	Q41	SA2-23-850-DC
15	Not Used	BRN-VIO	2P9-5, 7P1-17	Q43	--
16	Coin Lockout	BRN-GRY	2P9-6, 7P1-18, 7P2-4	Q45	SM-35-4000-DC
*17	Top Jet Bumper	BLU-BRN	2P12-7, 8P3-11	Q2	SG-23-850-DC
*18	Left Jet Bumper	BLU-RED	2P12-4, 8P3-12	Q4	SG-23-850-DC
*19	Bottom Jet Bumper	BLU-ORN	2P12-3, 8P3-13	Q6	SG-23-850-DC
*20	Left Kicker	BLU-YEL	2P12-6, 8P3-14	Q8	SG-23-850-DC
*21	Right Kicker	BLU-GRN	2P12-8, 8P3-15	Q10	SG-23-850-DC
*22	Not Used	BLU-BLK	2P12-9, 8P3-16	Q12	--
*	Right Flipper	BLU-VIO	7P1-8, 8P3-3	--	SFL-20-300 30-800-DC
*	Left Flipper	BLU-GRY	7P1-10, 8P3-4	--	SFL-20-300 30-800-DC

***NOTES:**

1. Contacts of solenoid 05 switch ground to magnet (Part No. 20-8991).
2. Special switch connections for solenoids 17 through 22 are as follows:
   17 -- ORN-BRN -- 2P13-5, 8P3-5
   18 -- ORN-RED -- 2P13-3, 8P3-6
   19 -- ORN-BLK -- 2P13-2, 8P3-7
   20 -- ORN-YEL -- 2P13-4, 8P3-8
   21 -- ORN-GRN -- 2P13-8, 8P3-9
   22 -- ORN-BLU -- 2P13-9, 8P3-10
3. Flipper button connections are as follows:
   Right -- ORN-VIO -- 2P12-1, 7P1-7
   Left -- ORN-GRY -- 2P12-2, 7P1-9
4. Typical wiring for solenoids and special switches:





Switch No.	Function (Score)
01	Plumb Bob Tilt
02	Ball Roll Tilt
03	Credit Button
04	Right Coin Switch
05	Center Coin Switch
06	Left Coin Switch
07	Slam Tilt
08	High Score Reset
09	Outhole
10	Left Outside Rollover (5000)
11	"D" Rollover (3000)
12	Left Kicker(10)
13	Lower Left Standup (1000)
14	"1" Target (1000/2000)
15	Eject Hole (5000/Lit Value)
16	Middle Left Standup (10)
17	Upper Left Standup (10)
18	"G" Drop Target (1000)
19	"O" Drop Target (1000)
20	"R" Drop Target (1000)
21	"G-O-R" Drop Targets Series (5000)
22	"G-O-R" Drop Targets Standup (10)
23	Magnet Switch (1000/Lit Value)
24	Middle Lower Standup (50)
25	Middle Upper Standup (50)
26	"A" Rollover (1000)
27	"B" Rollover (1000)
28	"C" Rollover (1000)
29	Playfield Tilt
30	Spinner (100/1000)
31	"2" Target (1000/2000)
32	"3" Target (1000/2000)
33	"4" Target (1000/2000)
34	Right Outside Rollover (5000)
35	"E" Rollover (3000)
36	Right Kicker (10)
37	Left Jet Bumper (100/1000)
38	Top Jet Bumper (100/1000)
39	Bottom Jet Bumper (100/1000)
40	"G-A-R" Drop Targets Standup (10)
41	"G" Drop Target (1000/5000)
42	"A" Drop Target (1000/5000)
43	"R" Drop Target (1000/5000)
44	"G-A-R" Drop Targets Series (5000)

Note: Second score value is lit or flashing value.

Figure 4. Playfield Switch Locations and Switch Chart

ROW / COLUMN	1 GRN-BRN	2 GRN-RED	3 GRN-ORN	4 GRN-YEL	5 GRN-BLK	6 GRN-BLU	7 GRN-VIO	8 GRN-GRY
1 WHT-BRN	PLUMB BOB TILT 1	OUTHOLE 9	UPPER LEFT STANDUP 17	MIDDLE UPPER STANDUP 25	"4" TARGET 33	"G" DROP TARGET 41	NOT USED 49	NOT USED 57
2 WHT-RED	BALL ROLL TILT 2	LEFT OUTSIDE ROLLOVER 10	"G" DROP TARGET 18	"A" ROLLOVER 26	RIGHT OUTSIDE ROLLOVER 34	"A" DROP TARGET 42	NOT USED 50	NOT USED 58
3 WHT-ORN	CREDIT BUTTON 3	"D" ROLLOVER 11	"O" DROP TARGET 19	"B" ROLLOVER 27	"E" ROLLOVER 35	"R" DROP TARGET 43	NOT USED 51	NOT USED 59
4 WHT-YEL	RIGHT COIN SWITCH 4	LEFT KICKER 12	"R" DROP TARGET 20	"C" ROLLOVER 28	RIGHT KICKER 36	"G-A-R" DROP TARGETS SERIES 44	NOT USED 52	NOT USED 60
5 WHT-GRN	CENTER COIN SWITCH 5	LOWER LEFT STANDUP 13	"G-O-R" DROP TARGETS SERIES 21	PLAYFIELD TILT 29	LEFT JET BUMPER 37	NOT USED 45	NOT USED 53	NOT USED 61
6 WHT-BLU	LEFT COIN SWITCH 6	"1" TARGET 14	"G-O-R" DROP TARGETS STANDUP 22	SPINNER 30	TOP JET BUMPER 38	NOT USED 46	NOT USED 54	NOT USED 62
7 WHT-VIO	SLAM TILT 7	EJECT HOLE 15	MAGNET SWITCH 23	"2" TARGET 31	BOTTOM JET BUMPER 39	NOT USED 47	NOT USED 55	NOT USED 63
8 WHT-GRY	HIGH SCORE RESET 8	MIDDLE LEFT STANDUP 16	MIDDLE LOWER STANDUP 24	"3" TARGET 32	"G-A-R" DROP TARGETS STANDUP 40	NOT USED 48	NOT USED 56	NOT USED 64

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Figure 5. Switch Matrix

COLUMN / ROW	1 YEL-BRN	2 YEL-RED	3 YEL-ORN	4 YEL-BLK	5 YEL-GRN	6 YEL-BLU	7 YEL-VIO	8 YEL-GRY
1 RED-BRN	SAME PLAYER SHOOTS AGAIN (PLAYFIELD)	2,000 BONUS	NOT USED	1 TARGET	MAGNET 5,000	"GAR" 5,000 WHEN LIT	NOT USED	#1 PLAYER UP
2 RED-BLK	LEFT SPECIAL	3,000 BONUS	10,000 BONUS	2 TARGET	MAGNET 10,000	GOR	1 CAN PLAY	#2 PLAYER UP
3 RED-ORN	RIGHT SPECIAL	4,000 BONUS	20,000 BONUS	3 TARGET	MAGNET 20,000	GAR	2 CAN PLAY	#3 PLAYER UP
4 RED-YEL	2X	5,000 BONUS	"A"	4 TARGET	MAGNET 30,000	EJECT HOLE 10,000	3 CAN PLAY	#4 PLAYER UP
5 RED-GRN	3X	6,000 BONUS	"B"	1 TARGET ARROW	MAGNET 50,000	EJECT HOLE 15,000	4 CAN PLAY	TILT
6 RED-BLU	STAR 1	7,000 BONUS	"C"	2 TARGET ARROW	TOP JET BUMPER	EJECT HOLE EXTRA BALL	MATCH	GAME OVER
7 RED-VIO	STAR 2	8,000 BONUS	"D"	3 TARGET ARROW	LEFT JET BUMPER	NOT USED	BALL IN PLAY	SAME PLAYER SHOOTS AGAIN (BACKBOX)
8 RED-GRY	1,000 BONUS	9,000 BONUS	"E"	4 TARGET ARROW	BOTTOM JET BUMPER	SPINNER 1,000	CREDITS (PLAYFIELD)	HIGH SCORE TO DATE

Figure 6. Lamp Matrix